

**6CG8-A****TRIODE-PENTODE CONVERTER**

9-PIN MINIATURE TYPE

*Intended for use in equipment having
series heater-string arrangement***6CG8-A****GENERAL DATA****Electrical:**

Heater, for Unipotential Cathode:

| | | | |
|---------------------------------|------|-----------|----------------|
| Voltage | 6.3 | | ac or dc volts |
| Current | 0.45 | | amp |
| Warm-up time (Average). | 11 | | sec |

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.

Direct Interelectrode Capacitances:

| | <i>Without External Shield</i> | <i>With External Shield⁰</i> | |
|--|--|---|---------------|
| Triode Unit: | | | |
| Grid to plate | 1.5 | 1.5 | μf |
| Grid to cathode & pentode grid No.3, and heater. | 2.6 | 3 | μf |
| Plate to cathode & pentode grid No.3, and heater. | 0.05 | 1 | μf |
| Pentode Unit: | | | |
| Grid No.1 to plate. | 0.03 max. | 0.016 max. | μf |
| Grid No.1 to cathode & grid No.3, grid No.2, and heater. | 4.8 | 5 | μf |
| Plate to cathode & grid No.3, grid No.2, and heater. | 0.9 | 1.6 | μf |
| Pentode grid No.1 to triode plate. | 0.05 max. | 0.04 max. | μf |
| Pentode plate to triode plate. | 0.05 max. | 0.007 max. | μf |
| Heater to cathode | 5.5 | 5.5 [•] | μf |

Characteristics:

| | <i>Triode Unit</i> | <i>Pentode Unit</i> | |
|--|--------------------|---------------------|------------------|
| Plate-Supply Voltage. | 100 | 250 | volts |
| Grid-No.2 Supply Voltage. | — | 150 | volts |
| Cathode Resistor. | 100 | 200 | ohms |
| Amplification Factor. | 40 | — | |
| Plate Resistance (Approx.). | 5900 | 750000 | ohms |
| Transconductance. | 5800 | 4600 | μmhos |
| Plate Current | 8.5 | 7.7 | ma |
| Grid-No.2 Current | — | 1.6 | ma |
| Grid-No.1 Voltage (Approx.) for plate current of 10 μamp | -10 | -10 | volts |

⁰ with external shield JETEC No.315 connected to cathode except as noted.

[•] with external shield JETEC No.315 connected to ground.

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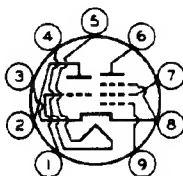
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TRIODE-PENTODE CONVERTER

Mechanical:

Mounting Position Any
 Maximum Overall Length 2-3/16"
 Maximum Seated Length 1-15/16"
 Length, Base Seat to Bulb Top (Excluding tip). 1-9/16" \pm 3/32"
 Maximum Diameter 7/8"
 Dimensional Outline See General Section
 Bulb T6-1/2
 Base Small-Button Noval 9-Pin (JETEC No. E9-1)
 Basing Designation for BOTTOM VIEW 9GF

Pin 1 - Triode Grid
 Pin 2 - Triode Plate
 Pin 3 - Cathode
 Pin 4 - Heater
 Pin 5 - Heater
 Pin 6 - Pentode Plate



Pin 7 - Pentode
 Grid No. 2
 Pin 8 - Pentode
 Grid No. 3,
 Cathode
 Pin 9 - Pentode
 Grid No. 1

CONVERTER SERVICE

Maximum Ratings, Design-Center Values:

| | Triode Unit as Osc. | Pentode Unit as Mixer | |
|---|------------------------|--------------------------|-------|
| PLATE VOLTAGE | 250 max. | 250 max. | volts |
| GRID-No. 2 (SCREEN-GRID) SUPPLY VOLTAGE | - | 250 max. | volts |
| GRID-No. 2 VOLTAGE | - | See Grid-No. 2 Input | |
| Rating Chart at front of Receiving Tube Section | | | |
| GRID-No. 1 (CONTROL-GRID) VOLTAGE: | | | |
| Negative bias value | 40 max. | 40 max. | volts |
| Positive bias value | 0 max. | 0 max. | volts |
| PLATE DISSIPATION | 1.5 max. | 2 max. | watts |
| GRID-No. 2 INPUT: | | | |
| For grid-No. 2 voltages up to 125 volts | - | 0.5 max. | watt |
| For grid-No. 2 voltages between 125 and 250 volts | - | See Grid-No. 2 Input | |
| Rating Chart at front of Receiving Tube Section | | | |
| GRID-No. 1 INPUT | 0.5 max. | - | watt |
| PEAK HEATER-CATHODE VOLTAGE: | | | |
| Heater negative with respect to cathode | 200 max. | 200 max. | volts |
| Heater positive with respect to cathode | 200 [▲] max. | 200 [▲] max. | volts |

[▲] The dc component must not exceed 100 volts.



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Typical Operation:

| | <i>Triode Unit as 250-Mc Osc. •</i> | <i>Pentode Unit as Mixer*</i> | |
|---|---|-----------------------------------|------------|
| Plate Voltage | 150 | 150 | volts |
| Grid-No.2 Voltage | - | 150 | volts |
| Mixer Grid-No.1 | | | |
| Supply Voltage | - | -3.5 | volts |
| Oscillator Voltage (rms) at mixer grid No.1. . . . | - | 2.6 | volts |
| Mixer Grid-No.1-Circuit Resistance | - | 120000 | ohms |
| Oscillator Grid Resistor. | 2700 | - | ohms |
| Conversion Trans- conductance | - | 2100 | μ mhos |
| Plate Current | 13 | 6.2 | ma |
| Grid-No.2 Current | - | 1.8 | ma |
| Grid Current | 3.6 | - | ma |
| Grid-No.1 Current | - | 2 | μ amp |
| Oscillator Power Output (Approx.) | 0.5 | - | watt |

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

| | | |
|-------------------------------------|----------|--------|
| For fixed-bias operation. | 0.1 max. | megohm |
| For cathode-bias operation. | 0.5 max. | megohm |

- In TV or FM receivers, it is generally desirable to operate the oscillator with less power input than shown in the tabulated data in order to avoid over-excitation and excessive oscillator radiation.

* with separate excitation and triode unit connected to ground.

Curves shown under Type 6X8 also apply to the 6CG8-A